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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/932,850 | 08/17/2001 | Hongbiao Zhang | 2736.2018-000 | 4529 |

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HORSHAM, PA 19044

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| EXAMINER |
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BELLO, AGUSTIN

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| ART UNIT | PAPER NUMBER |
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2633

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,850

Applicant(s)

ZHANG ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kodialam (U.S.

Patent Application Publication No. 2002/0018264).

Regarding claims 1 and 9, Kodialam teaches a method of determining a shortest path between a source node (N1 in Figure 1) and a destination node (N4 in Figure 1) in an optical network having plural network nodes (N1-N4 in Figure 1) interconnected with optical transmission links (reference letters l in Figure 1), the method comprising: representing the network as a uni-directional graph $G = \langle V, E \rangle$ with V defining a set of network nodes and E defining a set of uni-directional optical transmission links (paragraph [0009]); transforming the graph G to a wavelength graph $G' = \langle V', E' \rangle$ with V' defining a set of electronic nodes and optical channel nodes corresponding to the network nodes in set V and with E' defining a set of internal links and optical channel links, the optical channel links corresponding to the optical transmission links in set E (e.g. "The graph is modified" of paragraph [0009]; "forms a new network graph" of paragraph [0027]); and applying a single-source shortest path algorithm to the graph G' to determine a shortest path corresponding to an optimal path on graph G (paragraph [0020]).

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Regarding claims 2, 6, 10, 13, and 14, Kodialam teaches assigning an electronic node to each network node (e.g. “account for these limitations in wavelength conversion by each node” of paragraph [0007]), the electronic node representing an electronic switching fabric interconnecting optical-electrical-optical (OEO) transmitters and receivers of the network node (e.g. “OXC implemented with an electrical cross-connect” of paragraph [0023]); assigning optical channel nodes to each network node, each optical channel node representing an optical cross-connect (e.g. “optical cross-connect” of paragraph [0023]) for an optical channel available at the network node; for each network node, assigning an internal link from the electronic node to each optical channel node if an associated OEO transmitter is available for the corresponding optical channel and assigning an internal link to the electronic node from each optical channel node if an associated OEO receiver is available for the corresponding optical channel (paragraph [0008]); for each optical transmission link, assigning an optical channel link between a pair of optical channel nodes of corresponding network nodes (reference letters l in Figure 1) if the corresponding optical channel is available on the associated optical transmission link; and assigning costs to the internal links and the optical channel links (e.g. “each link in the network graph is weighted” paragraph [0029]). Regarding the applicant’s claims to computer program products and computer data signals see paragraphs [0090-0091].

Regarding claims 3, 7, and 11 Kodialam teaches that the costs assigned to the internal links are related to OEO conversion costs (e.g. “account for these limitations in wavelength conversion by each node” of paragraph [0007]).

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Regarding claims 4, 8, and 12 Kodialam teaches that the costs assigned to the optical channel links are related to costs of the corresponding optical transmission links (paragraph [0008]).

Regarding claim 5, Kodialam teaches applying the single-source shortest path algorithm includes applying Dijkstra's algorithm (paragraph [0031]).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adams, Lu, Wang, Alanyali, and Egner provide relevant art.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

Agustin Bello
Examiner
Art Unit 2633



10/27/04